

IN THE CLAIMS

This listing of the claims will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (Currently Amended) An interface device, comprising:

a network port to interface with a ~~packet-switched~~ computer network;

a telephony port to interface ~~a telephony device~~ said network port to a telephony device;

~~a data port to interface with a data terminal;~~ and

a processor coupled to each of said ports.
2. (Original) The interface device of claim 1 further comprising

a transceiver coupled between ~~the~~ said processor and said network port.
3. (Original) The interface device of claim 2 wherein the transceiver comprises a media access controller (MAC) coupled to the processor, and a modulator and a demodulator both disposed between the MAC and the network port.
4. (Original) The interface device of claim 3 wherein the modulator and the demodulation each comprises quadrature amplitude modulation.
5. (Currently Amended) The interface device of claim 1 wherein the processor determines whether voices signals from the network port are destined for ~~the data port or~~ the telephony port and couples the voice signals to ~~one of the data port and~~ said telephone port based on such determination.
6. (Original) The interface device of claim 1 further comprising a voice circuit coupled between the telephony port and the processor.

7. (Original) The interface device of claim 6 wherein the processor formats voice signals flowing from the telephony port to the processor into voice signal packets, and formats voice signals flowing from the processor to the telephony port into a PSTN telephony format.
8. (Original) The interface device of claim 7 wherein the telephony format comprises pulse code modulation.
9. (Original) The interface device of claim 6 wherein the voice circuit comprises a jitter buffer to receive voice signal packets of varying delay from the processor and compensating for the delay variation of the received voice signal packets.
10. (Original) The interface device of claim 9 wherein the jitter buffer comprises a voice queue which buffers the received voice signals for a holding time, and a voice synchronizer which adaptively adjusts the holding time of the voice queue.
11. (Original) The interface device of claim 6 wherein the voice circuit comprises a tone exchange to exchange DTMF signals between the telephony port and the processor.
12. (Original) The interface device of claim 6 wherein the voice circuit comprises a voice decoder to decode packets of voice signal flowing from the processor to the telephony port, a voice activity detector to detect the voice signals without speech, and a comfort noise generator to insert comfort noise in place of the voice signals without speech.
13. (Original) The interface device of claim 6 wherein the voice circuit comprises a voice decoder to decode packets of the voice signals flowing from the processor to the telephony port, a voice activity detector to detect lost voice signals, and a lost packet recovery engine to process the voice signals to compensate for the lost voice signals.

14. (Original) The interface device of claim 6 wherein the voice circuit comprises a voice encoder to encode the voice signals flowing from the telephony port to the processor, and a voice activity detector to suppresses the voice signals without speech.
15. (Original) The interface device of claim 14 wherein the voice circuit further comprises a comfort noise estimator to generate comfort noise parameters when the voice activity detector suppresses the voice signals without speech.
16. (Original) The interface device of claim 6 wherein the voice circuit further comprises a decoder to decode packets of the voice signals flowing from the processor to the telephony port, and an echo canceller capable of cancelling decoded voice signal echoes on voice signals flowing from the telephony port to the processor.
17. (Currently Amended) A gateway, comprising:
- a network port to interface with a ~~packet-switched~~ computer network;
 - a telephony port to interface to a telephony device;
 - a processor coupled to each of the ports; and
 - a transceiver disposed between the processor and the network port, the transceiver being capable of transmitting and receiving packets of voice signals and packets of data signals, ~~and television signals.~~
18. (Original) The gateway of claim 17 wherein the transceiver comprises a media access controller (MAC) coupled to the processor, and a modulator and a demodulator both disposed between the MAC and the network port.
19. (Original) The gateway of claim 18 wherein the modulator and the demodulation each comprises quadrature amplitude modulation.

20. (Original) The gateway of claim 17 wherein the processor determines whether the voices signals from the network port are destined for the telephony port and couples the voice signals to telephony port based on such determination.
21. (Original) The gateway of claim 17 further comprising a voice circuit coupled between the telephony port and the processor.
22. (Original) The gateway of claim 21 wherein the processor formats voice signals flowing from the telephony port to the processor into packets of voice signals, and formats the packets of voice signals flowing from the processor to the telephony port into a PSTN telephony format.
23. (Original) The gateway of claim 22 wherein the telephony format comprises pulse code modulation.
24. (Original) The gateway of claim 21 wherein the voice circuit comprises a jitter buffer to receive the packets of voice signals of varying delay from the processor and compensating for the delay variation of the received packets.
25. (Original) The gateway of claim 24 wherein the jitter buffer comprises a voice queue stored in volatile memory which buffers the received voice signals for a holding time, and a voice synchronizer which adaptively adjusts the holding time of the voice queue.
26. (Original) The gateway of claim 21 wherein the voice circuit comprises a tone exchange to exchange DTMF signals between the telephony port and the processor.
27. (Original) The gateway of claim 21 wherein the voice circuit comprises a voice decoder to

decode packets of voice signals flowing from the processor to the telephony port, a voice activity detector to detect the voice signals without speech, and a comfort noise generator to insert comfort noise in place of the voice signals without speech.

28. (Original) The gateway of claim 21 wherein the voice circuit comprises a voice decoder to decode packets of the voice signals flowing from the processor to the telephony port, a voice activity detector to detect lost voice signals, and a lost packet recovery engine to process the voice signals to compensate for the lost voice signals.

29. (Original) The gateway of claim 21 wherein the voice circuit comprises a voice encoder to encode the voice signals flowing from the telephony port to the processor, and a voice activity detector to suppresses the voice signals without speech.

30. (Original) The gateway of claim 29 wherein the voice circuit further comprises a comfort noise estimator to generate comfort noise parameters when the voice activity detector suppresses the voice signals without speech.

31. (Original) The gateway of claim 21 wherein the voice circuit further comprises a decoder to decode packets of the voice signals flowing from the processor to the telephony port, and an echo canceller capable of cancelling decoded voice signal echoes on voice signals flowing from the telephony port to the processor.

32. (Original) The gateway of claim 17 further comprising a voice circuit integrated with a processor in an ASIC form factor connected to a PSTN telephony port.

33. (Original) The gateway of claim 17 further comprising a voice circuit integrated with a processor in a ASIC form factor connected to a packet switched telephony port.

34. (Original) The gateway of claim 17 further comprising a voice circuit integrated with a processor in a ASIC form factor connected to a wireless telephony port flowing from the telephony device to the packet switched network.

25 – 48. Cancelled